

ABSTRACT

A Fourier transformation arrangement usable in an electronic warfare radio receiver for analyzing spectral content of multiple transmitter-sourced brief duration incoming signals for their signal characteristics. The disclosed Fourier transformation arrangement includes approximated Kernel function values disposed in a significant plurality of locations about a real-imaginary coordinate axis origin according to disclosed locating principles. The points are displaced from the origin by magnitudes having real and imaginary component lengths of powers of two commencing with zero. Multiplication involving a power of two component length during a Kernel function utilization are preferably achieved by way of an expanded binary shift multiplication algorithm in lieu of a full fledged digital multiplication algorithm. A group of guiding principles for selecting desirable approximation Kernel function locations is included.